



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/574,641

12/14/2006

Daniel Scheibli

09432.0065

2211

60668 7590 11/13/2008
SAP / FINNEGAN, HENDERSON LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

LINDSEY, MATTHEW S

ART UNIT

PAPER NUMBER

2451

MAIL DATE

DELIVERY MODE

11/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,641	Applicant(s) SCHEIBLI, DANIEL	
	Examiner MATTHEW S. LINDSEY	Art Unit 2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending in this application. Claims 1, 7 and 8 are amended as filed on 20 August 2008.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 August 2008 has been entered.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 971/972 (pg 12). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being

Art Unit: 2451

amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 7 and 11-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to "A computer readable medium", and according to applicants specification the computer readable medium can include paper (pg 11) and also suggests the use of signals (pg 10, 2nd paragraph, pg 11-12). As such the claims are drawn to a form of energy. Energy is not one of the four categories of invention and therefore these claims are not statutory. Energy is not a series of steps or acts to be a process. Energy is not a physical article or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 11-13 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al. (US 2002/0032777) in view of Choquier (US 5,951,694).

8. With respect to Claim 1, Kawata disclosed: “A method for use in a computer system comprising at least one first computer in an existing cluster of computers (Fig 1, objects 107, and 108, and [0037], lines 6-8)”, “the system for processing consecutive inquiries of an external computer ([0037], lines 4-8), the method comprising:

observing the processing time that the first computer requires for processing a first inquiry of the external computer ([0082], lines 11-20)”, and

“rerouting of a second inquiry from the first computer to the second computer ([0040], lines 1-5) if the processing time exceeds a standard time ([0067], lines 3-8, where it is possible to select servers in a round-robin fashion where if a load evaluation value of the selected server is at or greater than a threshold value the server is not selected and the next server in the round-robin is selected, and where the load evaluation value includes response time as shown by [0076], lines 1-7), the method

Art Unit: 2451

being characterised in that the standard time is dependent on the type of inquiry ([0044], lines 11-14)".

Kawata did not explicitly state: "and one second computer", or "performing an availability test to identify the second computer; incorporating the second computer into the existing cluster, if, based on the availability test, no suitable computer is available in the existing cluster".

However, Choquier disclosed: "and one second computer (Col. 23, lines 36-37, where a second computer is in the pool of unused servers)", or "performing an availability test to identify the second computer (Col. 23, lines 37-40 and Fig. 13, where based on the server load, if it is above the max load, a second computer is identified to be added to the cluster from the pool of unused servers); incorporating the second computer into the existing cluster, if, based on the availability test, no suitable computer is available in the existing cluster (Col. 23, lines 37-40 and Fig. 13, where when no suitable computer is available in the existing cluster, or step 1312 of Fig 13, the second computer is added to the cluster, or step 1314 of Fig 13)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the load balancing system of Kawata with the teachings of Choquier to include support for adding computers from outside the cluster to accommodate for excess load. Motivation to combine these references comes from Choquier, where: "Loads placed on particular services (or equivalently, particular service groups) may fluctuate relative to one another on a daily basis due to fluctuations in usage of different services... To accommodate for such fluctuations in service usage levels, the on-line

Art Unit: 2451

services network 100 allocates servers 120 to service groups based on service loads” (Col. 23, lines 27-35). Therefore, by combining the references one can accommodate for fluctuations in service usage.

9. With respect to Claim 7, Kawata disclosed: “A computer-readable medium ([0104], lines 1-5) that stores a set of instructions that when executed performs a method of routing external computer inquiries ([0037], lines 4-8), the computer-readable medium executed by the set of instructions comprising:

prompting an application to observe the processing time that a first computer in an existing cluster of computers (Fig 1, objects 107, and 108, and [0037], lines 6-8) requires for processing a first inquiry of an external computer ([0082], lines 11-20)”, and

“prompting the application to reroute a second inquiry from the first computer to the second computer ([0040], lines 1-5) if the processing time exceeds a standard time ([0067], lines 3-8, where it is possible to select servers in a round-robin fashion where if a load evaluation value of the selected server is at or greater than a threshold value the server is not selected and the next server in the round-robin is selected, and where the load evaluation value includes response time as shown by [0076], lines 1-7),

wherein the standard time is dependent on the type of inquiry ([0044], lines 11-14)”.

Kawata did not explicitly state: “prompting the application to perform an availability test to identify a second computer” or “prompting the application to

Art Unit: 2451

incorporate the second computer into the existing cluster, if, based on the availability test, no suitable computer is available in the existing cluster”.

However, Choquier disclosed: “prompting the application to perform an availability test to identify a second computer (Col. 23, lines 37-40 and Fig. 13, where based on the server load, if it is above the max load, a second computer is identified to be added to the cluster from the pool of unused servers)”, and “prompting the application to incorporate the second computer into the existing cluster, if, based on the availability test, no suitable computer is available in the existing cluster (Col. 23, lines 37-40 and Fig. 13, where when no suitable computer is available in the existing cluster, or step 1312 of Fig 13, the second computer is added to the cluster, or step 1314 of Fig 13)”.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the load balancing system of Kawata with the teachings of Choquier to include support for adding computers from outside the cluster to accommodate for excess load. Motivation to combine these references comes from Choquier, where: “Loads placed on particular services (or equivalently, particular service groups) may fluctuate relative to one another on a daily basis due to fluctuations in usage of different services... To accommodate for such fluctuations in service usage levels, the on-line services network 100 allocates servers 120 to service groups based on service loads” (Col. 23, lines 27-35). Therefore, by combining the references one can accommodate for fluctuations in service usage.

Art Unit: 2451

10. With respect to Claim 8, Kawata disclosed: “A system for processing consecutive inquiries from an external computer ([0037], lines 4-8) comprising: a first computer in an existing cluster of computers (Fig 1, objects 107, and 108, and [0037], lines 6-8)” and “an application operative to observe the processing time that the first computer requires for processing a first inquiry of an external computer ([0082], lines 11-20) and to reroute a second inquiry from the first computer to the second computer ([0040], lines 1-5) if the processing time exceeds a standard time ([0067], lines 3-8, where it is possible to select servers in a round-robin fashion where if a load evaluation value of the selected server is at or greater than a threshold value the server is not selected and the next server in the round-robin is selected, and where the load evaluation value includes response time as shown by [0076], lines 1-7), wherein the standard time is dependent on the type of inquiry ([0044], lines 11-14)”.

Kawata did not explicitly state: “a second computer” or “an application operative to perform an availability test to identify the second computer; incorporate the second computer into the existing cluster, if, based on the availability test, no suitable computer is available in the existing cluster”.

However, Choquier disclosed: “a second computer (Col. 23, lines 36-37, where a second computer is in the pool of unused servers)” or “an application operative to perform an availability test to identify the second computer (Col. 23, lines 37-40 and Fig. 13, where based on the server load, if it is above the max load, a second computer is identified to be added to the cluster from the pool of unused servers); incorporate the second computer into the existing cluster, if, based on the availability test, no suitable

Art Unit: 2451

computer is available in the existing cluster (Col. 23, lines 37-40 and Fig. 13, where when no suitable computer is available in the existing cluster, or step 1312 of Fig 13, the second computer is added to the cluster, or step 1314 of Fig 13)”.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the load balancing system of Kawata with the teachings of Choquier to include support for adding computers from outside the cluster to accommodate for excess load. Motivation to combine these references comes from Choquier, where: “Loads placed on particular services (or equivalently, particular service groups) may fluctuate relative to one another on a daily basis due to fluctuations in usage of different services... To accommodate for such fluctuations in service usage levels, the on-line services network 100 allocates servers 120 to service groups based on service loads” (Col. 23, lines 27-35). Therefore, by combining the references one can accommodate for fluctuations in service usage.

11. With respect to Claims 2, 11 and 16, Kawata disclosed: “wherein the standard time is dependent on the configuration of the first computer ([0039], lines 1-4 and [0070], lines 1-15, where depending on the processing power of the server, the load evaluation levels differ)”.

12. With respect to Claims 3, 12 and 17, Kawata disclosed: “wherein the processing time is determined relative to a quantity of data ([0044], lines 11-14)”.

Art Unit: 2451

13. With respect to Claims 4, 13 and 18, Kawata disclosed: “wherein the processing times of consecutive inquiries are taken into account during observation ([0040], lines 1-5, where the server with the lightest load is selected, hence the server that is processing the least intensive previous inquiries)”.

14. With respect to Claim 5, Kawata disclosed: “The method according to claim 1 wherein the step of observing is performed by an observer module ([0076], lines 1-7, where the load evaluation generation processing module generates load evaluation values) and the step of rerouting is performed by a rerouter module ([0069], lines 1-3, where the load balancer distributes service requests and [0067], lines 3-8, where if a load evaluation value is at or greater than a threshold value, the next server in the round robin is selected)”.

15. With respect to Claim 6, Kawata disclosed: “The method according to claim 1, wherein the steps of observation and rerouting are induced by a management program within the system ([0038], lines 1-5)”.

16. Claims 9, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata and Choquier in view of Boyd et al. (US 7,251,691 B2).

Art Unit: 2451

1. With respect to Claims 9, 14 and 19, the combination of Kawata and Choquier did not explicitly state: “wherein the processing time is the floating average time that the first computer requires for processing a stipulated number of inquiries”.

However, Boyd disclosed: “wherein the processing time is the floating average time that the first computer requires for processing a stipulated number of inquiries (Col. 3, lines 21-26, specifically moving average)”.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the load balancing system of Kawata and Choquier with the teachings of Boyd to include support for floating, or moving averages. Motivation to combine these references comes from Boyd, where: “The operation of the present invention is autonomic by continuously updating the average latency time for each storage device. The updated average latencies for each storage device are used each time a new consistent transactions set is transferred to the peer computers for storage. The updated average latency time is based upon a moving average with adjustable weighting of past and present measurements. This enables the present invention to adapt to changing conditions” (Col. 3, lines 19-27). Therefore by combining the references the load balancing system of Kawata can include using moving averages to adapt to changing conditions.

2. Claims 10, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata and Choquier in view of Hayashi et al. (US 6,598,071 B1).

3. With respect to Claims 10, 15 and 20, the combination of Kawata and Choquier did not explicitly state: “wherein the standard time is fixed relative to a stipulated number of inquiries such that rerouting occurs only when the processing time exceeds the standard time in more than a predetermined number of allowed incidences”.

However, Hayashi disclosed: “wherein the standard time is fixed relative to a stipulated number of inquiries (Col. 7, lines 56-67, where a response time results threshold must be exceeded a fixed number of times) such that rerouting occurs only when the processing time exceeds the standard time in more than a predetermined number of allowed incidences (Col. 7, lines 56-67, where a response time result exceeds a threshold a fixed number of times and Col. 8, lines 26-35 where a substitute server is used instead)”.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the load balancing system of Kawata and Choquier with the teachings of Hayashi to include support for exceeding a threshold a predetermined number of times before rerouting requests. Motivation to combine these comes from Hayashi, where: “The reason for using a fixed number of times for measurement results exceeding the threshold values as a criterion for whether switching is needed or not, is that even if the response time is momentarily bad and exceeds the threshold value, the average traffic load will probably present no problems during communication if the number of times the threshold value was exceeded is low” (Col. 7, lines 60-67).

Art Unit: 2451

Therefore by combining the references needless rerouting can be avoided if the threshold value is exceeded less than a fixed number of times.

Response to Arguments

4. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW S. LINDSEY whose telephone number is (571)270-3811. The examiner can normally be reached on Mon-Thurs 7-5, Fridays 7-12.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2451

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MSL
11/10/2008

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2451